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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/563,119	HARROLD ET AL.	
	Examiner	**Art Unit**	
	Allen Wong	2482	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-53* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-5, 12-20, 26-39, 42-50 and 53* is/are rejected.

8)☒ Claim(s) *6-11,21-25,40,41,51 and 52* is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☒ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *03 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
(f) BACKGROUND OF THE INVENTION.
(1) Field of the Invention.
(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(g) BRIEF SUMMARY OF THE INVENTION.
(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(i) DETAILED DESCRIPTION OF THE INVENTION.
(j) CLAIM OR CLAIMS (commencing on a separate sheet).
(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Content of Specification

(a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.

(b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.

(c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.

(d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).

(e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), “Sequence Listings” (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

(f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:

(1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."

(2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."

(g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the

invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

(h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.

(i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

(j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).

(k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).

(l) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

For reading clarification purposes, above line 2 on page 1 of Applicant's specification, "Background of the Invention" should be inserted.

Between lines 26-27 on page 8 of the specification, "Brief Summary of the Invention" should be inserted.

Between lines 24-25 on page 8 of Applicant's specification, "Brief Description of the Drawings" should be inserted.

Between lines 2-3 on page 13 of Applicant's specification, "Detail Description of the Invention" should be inserted.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 12-20, 26-39, 42-50 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spitzer (5,331,149) and Moseley (6,124,920) in view of Liu (6,771,345).

Regarding claim 1, Spitzer discloses a method of aligning display substrates comprising an array of pixels with component substrates comprising an array of optical components, the method comprising:

forming a display motherglass with an array of panels each comprising an array of visible pixels sufficient for a single display substrate (col.3, ln.67 to col.4, ln.14, fig.3, Spitzer discloses display motherglass 60 with the array of pixels 64, also note element

52 is glass substrate with array of pixels 62; fig.4, note each of the array panels comprise visible pixels 62);

dividing the display motherglass into display substrates each comprising an array of pixels (col.3, ln.67 to col.4, ln.14 and fig.3, note the display motherglass comprises multiple substrates, and note that element 60 has element 64 that comprises array of pixels, and element 52 has element 62, the array of plurality of pixels);

forming component substrates each with an array of optical components (col.3, ln.67 to col.4, ln.14 and fig.3 disclose substrates 52 and 60 with corresponding array of pixels 62 and 64; also fig.5A-5C, the component substrates are then illustrated to be combined).

Spitzer does not disclose in respect of each panel, a first alignment feature arranged outside the array of visible pixels, and a second alignment feature aligned with the array of optical components. However, Moseley teaches the first alignment feature arranged outside the array of visible pixels (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates) and a second alignment feature aligned with the array of optical components (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Spitzer and Moseley do not disclose the first alignment and second alignment features having surface reliefs aligned with the array of pixels of the respective panel, the surface relief of the second alignment feature being shaped to register with the surface relief of the first alignment feature. However, Liu teaches the first alignment and second alignment features having surface reliefs aligned with the array of pixels of the respective panel (col.4, ln.7-24, fig.3C, Liu discloses the triangle wave profiles are implemented to shape the contacts of electrodes 26A and 26B to form surface reliefs, wherein the surfaces of 26A and 26B are connected with the surface reliefs of the first and second alignment features having inverse shapes to permit the connection of the surface reliefs), the surface relief of the second alignment feature being shaped to register with the surface relief of the first alignment feature (col.4, ln.7-24, fig.3C, Liu discloses the triangle wave profiles are implemented to shape the contacts of electrodes 26A and 26B to form surface reliefs, wherein the surfaces of 26A and 26B are connected with the surface reliefs of the first and second alignment features having inverse shapes to permit the connection of the surface reliefs), and attaching the display substrates to respective component substrates with the first and second alignment features in registration with each other (col.4, ln.7-24, fig.3C, Liu discloses the triangle wave profiles are implemented to shape the contacts of electrodes 26A and 26B to form surface reliefs, wherein the surfaces of 26A and 26B are connected with the surface reliefs of the first and second alignment features having inverse shapes to permit the attachment of the surface reliefs between elements 26A and 26B). Therefore, it would have been obvious to one of ordinary skill in the art to combine the

teachings of Spitzer, Moseley and Liu, as a whole, for ensuring accurate connections of the surfaces of the substrates and components so as to minimize visual artifacts and distortions when outputting video data for display.

Regarding claim 2, Spitzer discloses wherein the step of forming the display motherglass comprises forming the display motherglass with an array of panels each comprising an array of pixels sufficient for a single display substrate (col.1, ln.47-54 and fig.4, note that a TFT or thin film transistor has an array of panels with array of pixels sufficient for the single display substrate).

Spitzer does not disclose attaching the first alignment features to the display motherglass. However, Moseley teaches attaching the first alignment features to the display motherglass (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Regarding claim 3, Spitzer discloses optical function (fig.3, note liquid crystal 56 is aligned with active matrix 58). Spitzer does not disclose the first alignment feature. However, Moseley teaches the first alignment feature arranged outside the array of visible pixels (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates), wherein the first alignment feature has an optical function and the step of attaching the first alignment features to the display motherglass (fig.16a-b, note optical functions are attached with liquid crystal, and in

fig.16b, note implementation of color filter). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Spitzer and Moseley do not disclose aligning the surface relief of the first alignment features with the array of pixels using an optical alignment technique. However, Liu teaches aligning the surface relief of the first alignment features with the array of pixels using an optical alignment technique (col.4, ln.7-24, fig.3C, Liu discloses the triangle wave profiles are implemented to shape the contacts of electrodes 26A and 26B to form surface reliefs, wherein the surfaces of 26A and 26B are connected with the surface reliefs of the first and second alignment features having inverse shapes to permit the attachment of the surface reliefs between elements 26A and 26B). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer, Moseley and Liu, as a whole, for ensuring accurate connections of the surfaces of the substrates and components so as to minimize visual artifacts and distortions when outputting video data for display.

Regarding claim 4, Spitzer discloses wherein the step of forming component substrates comprises forming a component motherglass with an array of panels each comprising an array of optical components sufficient for a single component substrate (col.1, ln.47-54 and fig.4, note that a TFT or thin film transistor has an array of panels with array of pixels sufficient for the single display substrate).

Spitzer discloses with, in respect of each panel, aligned with the array of optical components (col.1, ln.47-54 and fig.4, note that a TFT or thin film transistor has an array of panels with array of pixels sufficient for the single display substrate), and dividing the component motherglass into display substrates each comprising an array of optical components (fig.3, note the plural display substrates and fig.4, note each substrate comprises multiple optical components).

Spitzer does not disclose a second alignment feature. However, Moseley teaches the second alignment feature (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus including the first and second alignment features). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Regarding claim 5, Spitzer discloses a common layer with part of the structure of the optical component (fig.3, element 56 is the liquid crystal or the common layer that is associated with the active matrix 58). Spitzer does not disclose the second alignment feature, and the step of forming component substrates comprises forming the common layer with both the second alignment feature and said part of the structure of the optical component. However, Moseley teaches the second alignment feature (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus including the first and second alignment features), and the step of forming component substrates comprises forming the common layer with both the

second alignment feature and said part of the structure of the optical component (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus, the first and second alignment layers exist, wherein the liquid crystal is the common layer). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Regarding claims 12 and 26, Spitzer does not disclose wherein the first alignment feature comprises a micro-structure layer on a support layer. However, Moseley teaches the first alignment feature comprises a micro-structure layer on a support layer (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, wherein the alignment layer is comprised of microstructure layer). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Regarding claims 13 and 27, Spitzer and Moseley do not disclose wherein the surface reliefs of the first and second alignment features have inverse shapes. However, Liu teaches wherein the surface reliefs of the first and second alignment features have inverse shapes (col.4, ln.7-24, fig.3C, Liu discloses the triangle wave profiles are implemented to shape the contacts of electrodes 26A and 26B to form surface reliefs, wherein the surfaces of 26A and 26B are connected with the surface

reliefs of the first and second alignment features having inverse shapes to permit the attachment of the surface reliefs between elements 26A and 26B). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer, Moseley and Liu, as a whole, for ensuring accurate connections of the surfaces of the substrates and components so as to minimize visual artifacts and distortions when outputting video data for display.

Regarding claims 14 and 28, Spitzer disclose s wherein the display substrate comprises an active matrix substrate for a display panel and a counter substrate (fig.3, element 58 is active matrix, and element 54 can be considered the counter substrate). Also, Moseley discloses wherein the display substrate comprises an active matrix substrate for a display panel and a counter substrate (fig.16b, note patterned color filter is the active matrix substrate for a display panel and note there are two glass substrates that are opposite of one another, thus these glass substrates are counter substrates).

Regarding claims 15 and 29, Spitzer discloses the implementation of lenses (col.6, ln.28-30). Spitzer does not disclose the lenses in the component substrates. However, to one of ordinary skill in the art, it is obvious that lenses are considered optical components and can be implemented anywhere as needed for optical applications, including in substrates as needed.

Regarding claim 16, Spitzer discloses a display apparatus comprising a display substrate comprising an array of visible pixels attached to a component substrate comprising an array of optical components (col.3, ln.67 to col.4, ln.14, fig.3, Spitzer

discloses display motherglass 60 with the array of pixels 64, also note element 52 is glass substrate with array of pixels 62; fig.4, note each of the array panels comprise visible pixels 62).

Spitzer does not disclose the first alignment feature arranged outside of array of visible pixels, and aligned with the array of visible pixels, the second alignment feature aligned with the array of optical components. However, Moseley teaches disclose the first alignment feature arranged outside of array of visible pixels (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus, the first alignment feature is disclosed), and a second alignment feature aligned with the array of optical components (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus, the second alignment feature is disclosed). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Spitzer and Moseley do not disclose the first and second alignment features have respective surface reliefs in registration with each other. However, Liu teaches the first and second alignment features have respective surface reliefs in registration with each other (col.4, ln.7-24, fig.3C, Liu discloses the triangle wave profiles are implemented to shape the contacts of electrodes 26A and 26B to form surface reliefs, wherein the surfaces of 26A and 26B are connected with the surface reliefs of the first and second alignment features having inverse shapes to permit the connection of the surface

reliefs). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer, Moseley and Liu, as a whole, for ensuring accurate connections of the surfaces of the substrates and components so as to minimize visual artifacts and distortions when outputting video data for display.

Regarding claim 17, Spitzer does not disclose wherein the first alignment feature is attached to the display substrate. However, Moseley teaches wherein the first alignment feature is attached to the display substrate (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus, the first alignment feature is disclosed). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Regarding claim 18, Spitzer discloses the implementation of optical function (col.6, ln.28-30, note lenses are optical functions). Spitzer does not disclose the first alignment feature. However, Moseley teaches the first alignment feature (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus, the first alignment feature is disclosed). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for permitting the alignment feature to have optical function so as to implement alignment features for aligning the components/substrates together for permitting the display of video data.

Regarding claim 19, Spitzer does not disclose wherein the optical function of the first alignment feature is the same as the optical function of the optical components. However, Moseley teaches the first alignment feature is attached to the display substrate (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus, the first alignment feature is disclosed). Therefore, it would have been obvious to one of ordinary skill in the art to implement the optical function of the first alignment feature is the same as the optical function of the optical components for permitting the alignment feature to have optical function so as to implement alignment features for aligning the components/substrates together for permitting the display of video data.

Regarding claim 20, Spitzer does not disclose wherein the second alignment feature is formed in a common layer with part of the structure of the optical component. However, Moseley teaches wherein the second alignment feature is formed in a common layer with part of the structure of the optical component (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus, the first and second alignment layers exist, wherein the liquid crystal is the common layer). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Regarding claim 30, Spitzer discloses wherein the display substrate has been formed by division from a motherglass (col.3, ln.67 to col.4, ln.14 and fig.3, note the

display motherglass comprises multiple substrates, and note that element 60 has element 64 that comprises array of pixels, and element 52 has element 62, the array of plurality of pixels).

Regarding claim 31, Spitzer discloses wherein the component substrate has been formed by division from a motherglass (col.3, ln.67 to col.4, ln.14 and fig.3, note the display motherglass comprises multiple substrates, and note that element 60 has element 64 that comprises array of pixels, and element 52 has element 62, the array of plurality of pixels).

Regarding claim 32, Spitzer discloses a display substrate comprising an array of pixels for attachment to a component substrate comprising an array of optical components (col.3, ln.67 to col.4, ln.14, fig.3, Spitzer discloses display motherglass 60 with the array of pixels 64, also note element 52 is glass substrate with array of pixels 62; fig.4, note each of the array panels comprise optical components or visible pixels 62).

Spitzer does not disclose wherein the display substrate has a first alignment feature arranged outside the array of visible pixels. However, Moseley teaches wherein the display substrate has a first alignment feature arranged outside the array of visible pixels (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus the first alignment feature is disclosed). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for implementation of

alignment features for aligning the components/substrates together for permitting the display of video data.

Spitzer and Moseley do not disclose having a surface relief arranged outside the array of visible pixels and aligned with the array of pixels. However, Liu teaches a first alignment feature having a surface relief arranged outside the array of visible pixels and aligned with the array of pixels (col.4, ln.7-24, fig.3C, Liu discloses the triangle wave profiles are implemented to shape the contacts of electrodes 26A and 26B to form surface reliefs, wherein the surfaces of 26A and 26B are connected with the surface reliefs of the first and second alignment features having inverse shapes to permit the connection of the surface reliefs). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer, Moseley and Liu, as a whole, for ensuring accurate connections of the surfaces of the substrates and components so as to minimize visual artifacts and distortions when outputting video data for display.

Regarding claim 33, Spitzer does not disclose wherein the first alignment feature is attached to the display substrate. However, Moseley teaches wherein the first alignment feature is attached to the display substrate (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus, the first alignment feature is disclosed). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Regarding claim 34, Spitzer discloses the implementation of optical function (col.6, ln.28-30, note lenses are optical functions). Spitzer does not disclose the first alignment feature. However, Moseley teaches the first alignment feature (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus, the first alignment feature is disclosed). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for permitting the alignment feature to have optical function so as to implement alignment features for aligning the components/substrates together for permitting the display of video data.

Regarding claim 35, Spitzer does not disclose wherein the first alignment feature comprises a micro-structure layer on a support layer. However, Moseley teaches the first alignment feature comprises a micro-structure layer on a support layer (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, wherein the alignment layer is comprised of microstructure layer). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Regarding claim 36, Spitzer disclose s wherein the display substrate comprises an active matrix substrate for a display panel and a counter substrate (fig.3, element 58 is active matrix, and element 54 can be considered the counter substrate). Also, Moseley discloses wherein the display substrate comprises an active matrix substrate for a display panel and a counter substrate (fig.16b, note patterned color filter is the

active matrix substrate for a display panel and note there are two glass substrates that are opposite of one another, thus these glass substrates are counter substrates).

Regarding claim 37, Spitzer discloses wherein the display substrate has been formed by division from a motherglass (col.3, ln.67 to col.4, ln.14 and fig.3, note the display motherglass comprises multiple substrates, and note that element 60 has element 64 that comprises array of pixels, and element 52 has element 62, the array of plurality of pixels).

Regarding claim 38, Spitzer discloses a component substrate comprising an array of optical components for attachment to a display substrate comprising an array of visible pixels (col.3, ln.67 to col.4, ln.14, fig.3, Spitzer discloses display motherglass 60 with the array of pixels 64, also note element 52 is glass substrate with array of pixels 62; fig.4, note each of the array panels comprise optical components or visible pixels 62).

Spitzer does not disclose a second alignment feature arranged outside the array of optical features to be aligned with the array of visible pixels of the display substrate. However, Moseley teaches the second alignment feature arranged outside the array of optical features to be aligned with the array of visible pixels of the display substrate (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus the first and second alignment features are disclosed). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Spitzer and Moseley do not disclose having a surface relief aligned with the array of optical components. However, Liu teaches a second alignment having a surface relief aligned with the array of optical components (col.4, ln.7-24, fig.3C, Liu discloses the triangle wave profiles are implemented to shape the contacts of electrodes 26A and 26B to form surface reliefs, wherein the surfaces of 26A and 26B are connected with the surface reliefs of the first and second alignment features having inverse shapes to permit the connection of the surface reliefs). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer, Moseley and Liu, as a whole, for ensuring accurate connections of the surfaces of the substrates and components so as to minimize visual artifacts and distortions when outputting video data for display.

Regarding claim 39, Spitzer discloses a common layer with part of the structure of the optical component (fig.3, element 56 is the liquid crystal or the common layer that is associated with the active matrix 58). Spitzer does not disclose wherein the second alignment feature is formed in a common layer with part of the structure of the optical component. However, Moseley wherein the second alignment feature is formed in the common layer with part of the structure of the optical component (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus, the first and second alignment layers exist, wherein the liquid crystal is the common layer). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for

implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Regarding claim 42, Spitzer discloses the implementation of lenses (col.6, ln.28-30). Spitzer does not disclose the lenses in the component substrates. However, to one of ordinary skill in the art, it is obvious that lenses are considered optical components and can be implemented anywhere as needed for optical applications, including in substrates as needed.

Regarding claim 43, Spitzer discloses wherein the component substrate has been formed by division from a motherglass (col.3, ln.67 to col.4, ln.14 and fig.3, note the display motherglass comprises multiple substrates, and note that element 60 has element 64 that comprises array of pixels, and element 52 has element 62, the array of plurality of pixels).

Regarding claim 44, Spitzer discloses a display motherglass comprising an array of panels each comprising an array of visible pixels sufficient for a single display substrate (col.3, ln.67 to col.4, ln.14, fig.3, Spitzer discloses display motherglass 60 with the array of pixels 64, also note element 52 is glass substrate with array of pixels 62; fig.4, note each of the array panels comprise visible pixels 62).

Spitzer does not disclose with respect of each panel a first alignment feature arranged outside the array of visible pixels. However, Moseley teaches wherein the display substrate has a first alignment feature arranged outside the array of visible pixels (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus the first alignment feature is disclosed). Therefore, it

would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Spitzer and Moseley do not disclose having a surface relief arranged outside the array of visible pixels and aligned with the array of visible pixels. However, Liu teaches a first alignment feature having a surface relief arranged outside the array of visible pixels and aligned with the array of pixels (col.4, ln.7-24, fig.3C, Liu discloses the triangle wave profiles are implemented to shape the contacts of electrodes 26A and 26B to form surface reliefs, wherein the surfaces of 26A and 26B are connected with the surface reliefs of the first and second alignment features having inverse shapes to permit the connection of the surface reliefs). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer, Moseley and Liu, as a whole, for ensuring accurate connections of the surfaces of the substrates and components so as to minimize visual artifacts and distortions when outputting video data for display.

Regarding claim 45, Spitzer does not disclose wherein the first alignment feature is attached to the display substrate. However, Moseley teaches wherein the first alignment feature is attached to the display substrate (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus, the first alignment feature is disclosed). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole,

for implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Regarding claim 46, Spitzer discloses the implementation of optical function (col.6, ln.28-30, note lenses are optical functions). Spitzer does not disclose the first alignment feature. However, Moseley teaches the first alignment feature (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus, the first alignment feature is disclosed). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for permitting the alignment feature to have optical function so as to implement alignment features for aligning the components/substrates together for permitting the display of video data.

Regarding claim 47, Spitzer does not disclose wherein the first alignment feature comprises a micro-structure layer on a support layer. However, Moseley teaches the first alignment feature comprises a micro-structure layer on a support layer (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, wherein the alignment layer is comprised of microstructure layer). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Regarding claim 48, Spitzer disclose s wherein the display substrate comprises an active matrix substrate for a display panel and a counter substrate (fig.3, element 58 is active matrix, and element 54 can be considered the counter substrate). Also,

Moseley discloses wherein the display substrate comprises an active matrix substrate for a display panel and a counter substrate (fig.16b, note patterned color filter is the active matrix substrate for a display panel and note there are two glass substrates that are opposite of one another, thus these glass substrates are counter substrates).

Regarding claim 49, Spitzer discloses a component motherglass comprising an array of panels each comprising an array of optical components sufficient for a single component substrate for attachment to a display substrate comprising an array of visible pixels (col.3, ln.67 to col.4, ln.14, fig.3, Spitzer discloses display motherglass 60 with the array of pixels 64, also note element 52 is glass substrate with array of pixels 62; fig.4, note each of the array panels comprise optical components or visible pixels 62).

Spitzer does not disclose with respect of each panel a second alignment feature arranged outside the array of optical features to be aligned with the array of visible pixels of the display substrate. However, Moseley teaches the second alignment feature arranged outside the array of optical features to be aligned with the array of visible pixels of the display substrate (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus the first and second alignment features are disclosed). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Spitzer and Moseley do not disclose aligned with the array of optical components. However, Liu discloses a second alignment having a surface relief aligned with the array of optical components (col.4, ln.7-24, fig.3C, Liu discloses the triangle wave profiles are implemented to shape the contacts of electrodes 26A and 26B to form surface reliefs, wherein the surfaces of 26A and 26B are connected with the surface reliefs of the first and second alignment features having inverse shapes to permit the connection of the surface reliefs). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer, Moseley and Liu, as a whole, for ensuring accurate connections of the surfaces of the substrates and components so as to minimize visual artifacts and distortions when outputting video data for display.

Regarding claim 50, Spitzer discloses a common layer with part of the structure of the optical component (fig.3, element 56 is the liquid crystal or the common layer that is associated with the active matrix 58). Spitzer does not disclose wherein the second alignment feature is formed in a common layer with part of the structure of the optical component. However, Moseley wherein the second alignment feature is formed in the common layer with part of the structure of the optical component (fig.16b, note elements 10 are the alignment layers that can be arranged outside of the two glass substrates, thus, the first and second alignment layers exist, wherein the liquid crystal is the common layer). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Spitzer and Moseley, as a whole, for

implementation of alignment features for aligning the components/substrates together for permitting the display of video data.

Regarding claim 53, Spitzer discloses the implementation of lenses (col.6, ln.28-30). Spitzer does not disclose the lenses in the component substrates. However, to one of ordinary skill in the art, it is obvious that lenses are considered optical components and can be implemented anywhere as needed for optical applications, including in substrates as needed.

Allowable Subject Matter

Claims 6-11, 21-25, 40, 41 and 51-52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (571)272-7341. The examiner can normally be reached on Mondays to Thursdays from 8am-6pm Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (571) 272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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